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## ABSTRACT

Increasing the opportunities for young children to become perceptive of the environment around them is the goal of a year-long environmental project for primary grade students described in this booklet. An environmental encounter approach is adopted, focusing all of one's senses on the particular environment he is experiencing at the moment, analyzing how he perceives it and how he feels about it. The ideas presented are examples of incorporating environmental learnings into the treatment of subject matter already being dealt with. Several encounters are briefly annotated for use in developing perception of self. For learning about the world through the use of the senses and as an aid in achieving the goal of self-perception, three units from TV series are also summarized. Activities in many curriculum areas that could be used to help develop and deepen the children's environmental perception are explained. These activities make particular use of cameras and environmental encounters. Some of the problems characteristic to this educational approach are related together with recommendations regarding follow-up programs. Appended material includes examples of students' original poems. (BL)

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**A YEAR-LONG ENVIRONMENTAL PROJECT**

**for primary grades**

**Gloria Abrahamson**



Sedro-Woolley Project Report No. 8  
November 1971  
U.S.O.E. Project No. 0-0848  
Grant No. OEG-0-70-5039

Huxley College of Environmental Studies  
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TO THE TEACHER:

Presented here are ideas for multidisciplinary environmental education. The objectives of the ideas and methods suggested are clearly stated. The overall objective is to provide you, the teacher, with an aid in the development of your approach to teaching for and about the environment. These are not learning packages designed to be applied verbatim, but suggestions for ideas and methods that will enable you to develop learning packages. The contents of this report represent only the first treatment of the idea. It is published in this form in order that teachers may have an opportunity to experiment with it.

You will have to design your personal approach to environmental education. You are an environmental educator now, whether you realize it or not, because the environment is all around you and you are teaching about the environment that surrounds both you and your students. The state of the environment indicates that there is something wrong with the way in which you have learned to perceive and behave relative to the environment, and with the way you are teaching others to learn and behave in their environment today.

The ideas presented here are examples of ways in which you can incorporate environmentally beneficial learnings into your curriculum. The intent is not that you "add on" something specifically environmental to your curriculum, but that you incorporate environmental learnings into your treatments of the subject matter with which have have already been dealing. The specific manner in which you treat your responsibility to

educate for environmental stewardship is up to you. It is hoped that these and many other ideas will help you in your effort to understand the meaning of "environmental education" and its implications for you as a teacher and as a human organism.

The environmental education development project of which this report is a part is an ongoing one, and it is hoped that all who attempt to use the report will participate in the project by reporting the results of their efforts to the project staff. The staff will compile the ideas and methods collected. This will enable all working on the development of environmental education to share each other's work and will promote the spirit of cooperation essential to the success of any project as broad as this one.

Please report the methods and results derived from your use of this report to:

John Miles, Director  
Environmental Education Project  
Huxley College of Environmental  
Studies  
Bellingham, Washington 98225

Thank you.

## TABLE OF CONTENTS

|                                              |    |
|----------------------------------------------|----|
| TO THE TEACHER . . . . .                     | 1  |
| INTRODUCTION . . . . .                       | 1  |
| PERCEPTION OF SELF: SELF-AWARENESS . . . . . | 5  |
| Environmental Encounters . . . . .           | 5  |
| Television . . . . .                         | 13 |
| ENVIRONMENTAL PERCEPTION . . . . .           | 18 |
| Activities . . . . .                         | 18 |
| PROBLEMS ENCOUNTERED . . . . .               | 22 |
| RECOMMENDATIONS FOR FOLLOW-UP . . . . .      | 23 |
| BIBLIOGRAPHY . . . . .                       | 25 |
| APPENDIX . . . . .                           | 27 |

## A YEAR-LONG ENVIRONMENTAL PROJECT

### INTRODUCTION

Because of the environmental crises which the world faces--overcrowding, poisoning by waste pollution, starvation, ugliness and noise, and many others, the problems of the environment need to be brought to the attention of everyone, particularly the young. The interest and the perceptive questions of children can do much to bring problems to the attention of adults.

The American people need to revamp and revise some of their values. The education of the young is a good place to start this revision. Reverence and appreciation for the beauty and purity of our land is rather at odds with the traditional growth and progress syndrome. A different attitude, I believe, comes easily within an earth-appreciation framework. The question of values quite naturally arises, when one looks at the contrast between a green meadow, a concrete parking lot, or a car cemetery. The contrast between a clear lake or stream good for fishing and swimming and a stinking cesspool complete with floating litter is also clear. These unending contrasts lead to the question "why?" and then perhaps to the raising of alternatives.

An attempt to bring about these perceptions with my students has necessarily brought about some changes in my teaching. Formerly, when I thought of the environment I thought of my last hike or of pollution. Now I notice the colors of the room I'm in, the appearance of the walls and furniture, the smell, the noise, the people, the feeling it gives me. I notice the mountains, the trees, houses, animals, cars, colors; in short,

everything, and the environment, to me, has become my entire surroundings.

With this idea of the environment, which has been due in great part to Sedro-Woolley's Environmental Education Project, my ambition for my second and third year children has been for them to begin to become perceptive of the environment around them. Children often receive vague impressions of the total environment, but the brief flashes of sharp focus are few. I would like to increase the number of these flashes and to help make these moments of awareness and perception of the sort that will lead to environmental curiosity and concern on the part of the student.

One approach I have adopted has been the use of the environmental encounter. In this experience, a person focuses all his senses on the particular environment he is experiencing at the moment, analyzing how he perceives it, and how he feels about it. Often I ask the children to write their feelings, and later we share them with each other. Occasionally, I ask them to tell us what they think could be done to improve the particular environment. Also, we occasionally raise the question, "Why is this environment this way?"

Another result of this new attitude of mine is a more spontaneous response on my part to the environment. If there is a rain and wind storm during the reading period, we go out and experience it in an environmental encounter. If someone's mother brings a puppy during social studies, we experience it. We play in the first snowfall. Spontaneous interest is often the strongest, and it encourages perception of the environment around us. It also encourages and stimulates a child's natural curiosity, and allows his feelings to be important. The other work can be finished later.

I have also developed the awareness that children's ideas are important. I often let my children decide the reasons for something being the way it is. I let them work out the answers to questions they want to know. I don't automatically respond with the correct answer. Children get more satisfaction from finding the answer themselves and will remember their discovered answer longer. Often a child's special-interest research can be presented to the class in a report. The other children are always more interested when they know the report stems from a real, rather than a manufactured, interest on the reporter's part.

These are some of the changes in me and in my teaching due to a greater environmental awareness. An additional benefit is that I have become particularly aware of beauty. Thank God for spring!

To facilitate and aid children in becoming perceptive, a camera is useful. Naturally, a person with a camera is looking for a picture to shoot. He examines things more closely to discover appropriate subjects and he looks at the subject from different angles and perspectives than he does normally. Usually, use of a camera sharpens perception and awareness of the environment.

In introducing the cameras, my children and I viewed the film "The Searching Eye." The film suggests that the camera is an extension of the eye and what it sees. We discussed this idea and how a camera works like the eye. I showed the class some examples of pictures taken by photographer Lee Mann. We discussed how to use a camera.

I feel using cameras with my second and third year children has been successful. They were quickly able to master the operation of the

simple Instamatics, and they were very interested and enthusiastic. I allowed the children to practice with the cameras when they were not loaded with film. They practiced behind a cardboard screen, two at a time, and caught the class in candid (imaginary) shots. After several turns, they were aware of how the cameras worked. We then listened to a photographer give pointers on how to hold a camera when shooting, and ideas on what to shoot. With this beginning, the children were remarkably successful. We engaged in analysis and discussion of mistakes and generally worked to increase our perceptual skills through photographic exercise.

Thought and conversation about the environment has gone on all year in our classroom. Sometimes it has been incorporated into the units and projects we are doing at the time. For example, in learning about what seeds and plants need to grow, it is very convenient to mention how we and plants often are interdependent, we much more so than they. At other times we have simply studied environmental topics for their own sake, especially in regard to perception. Such an important area certainly deserves attention.

The preceding theses are some of the ideas behind my project in environmental education. They have made school more enjoyable and interesting for me, and have begun to develop the environmental awareness of my students. I hope these ideas may be of use to others, and to this end I will now elaborate them more fully.

## PERCEPTION OF SELF: SELF-AWARENESS

### Goals:

1. To make each child more aware of himself, and how he perceives his environment.
2. To make children begin to think of how they need other people, and of how other people need them.
3. To enable the student to experience the process of introspection.

### Environmental Encounters

Before each encounter we review together all the ways we can look at something. We think of the five senses and what they do. Then we are ready to begin.

In an environmental encounter, a person thinks about the environment around him. He considers each sense and thinks about what it tells him. He analyzes how the environment seems to him, and then records his findings. Later he shares his results with others who have had the same experience. Sometimes this is spontaneous on the children's part. They can hardly wait to write down how they felt about something, and then tell about it.

The children responded well to this approach of using their senses. Many of them wrote more, and more perceptively, than they ever had before. In addition, they seemed to really enjoy this activity. Children aren't often asked to tell what they don't like. Even less often are they asked how something could be improved. They really have some good ideas and enjoy contributing them. For instance, our classroom is old and small

and rather dingy. The children thought a carpet, fresh paint (psychedelic), a new arrangement of furniture would improve it. It's too small, they thought. They went on in great detail. Next year, I plan to have such an encounter the first day of school. The children will then help with the furniture arrangement, the colors for the bulletin boards, etc. It will really be our room.

After we have discussed the reactions the children have had to a particular experience, the children often want to repeat the experience. This may be because they had not really observed the qualities of the experience before, if they had been in such a situation at all. For instance, they notice that there is another wind storm, and they relive how it seemed to them before. They notice differences and similarities of this storm to the other and generally seem more perceptive. This increase in perceptual skill and curiosity is my goal.

The following is a list of the encounters we have had. This is a bare beginning. Many more are possible.

1. In the classroom. I introduced environmental encounter by telling the children, "I am going to ask you to use all your senses right now and to think about them. I want you to tell how your classroom seems to you. What is it like? What do you think about it? Use all of your senses to tell about it. Write down what you discover. We will share what we have observed when we are finished."

2. A walk to Lyman City Park. We repeated the experience of using our senses and analyzing our feelings. Again, we recorded and compared what we observed with other students.

3. A walk outside in the falling snow. We used snow as a focus for using our senses: we listened to it; felt it; tasted it. We recorded our findings in poems about snow to share with others.

4. A walk outside in a wind and rain storm. We repeated the experience during this storm, and shared stories or poems with others.

5. The lunchroom at lunchtime. We recorded and shared our impressions.

6. Hogs, encountered with cameras. We walked approximately a quarter mile to where some baby pigs had been born. The children used their senses again, and they also took two pictures of the pigs. When they returned to the classroom, they wrote about their thoughts and feelings. They put their pictures and reports in their personally constructed photograph albums.

7. The classroom. I instructed the children this time to "notice everything around you. Look especially for things that you think are bad. Make a list of things you don't like, and tell how you think things could be better. Try to think of ways that we could really improve our classroom. Share your ideas with the class."

8. Puppies, encountered with cameras. Two of the children each brought two puppies to school for the day. The children observed the puppies and played with them intermittently all day long. In the afternoon they each took two pictures of them and wrote about the experience. Again, these pictures were placed in their photo albums.

9. Rabbits, encountered with cameras. The same procedure detailed above was used.

10. The Vancouver Game Farm, encountered with cameras. The children experienced the great variety of animals available at this preserve. They each had a camera and a roll of film to record their experiences. They wrote a summary of the experience to be placed in their photo albums.

11. Lemon Koolaid. One of my children was making terrible faces during the morning work period. I asked her what was wrong and she said she was eating some of "this lemon Koolaid stuff," and remarked, "Boy, is it sour!" Another child asked her for some, and another, so I asked her to distribute some to everyone. (It really was awful.) When we were all making faces and coughing, I told them to quickly write down in their notebooks how they felt when they ate lemon Koolaid. "How did it seem to you?" They wrote some very descriptive stories about the experience, dealing a lot with the sense of taste, which they spontaneously shared as they wrote them ("Oh, it burns my tongue!")

12. Record, "The Language and Music of Wolves."\* I asked the children to get ready to use their senses. They cleared off their desks, and then I began to play the record. I first played the side without narration: simply the sounds of wolves. The children listened intently, occasionally asking a question and looking at the cover. I played the entire side. Then I passed out water colors, brushes, white art paper, and water. I asked them to try to show on paper how they felt when they

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\*"The Language and Music of Wolves," narrated by Robert Redford, projected by Natural History Magazine, produced by Tonsil Records.

listened to the record. I played it again and they listened and painted. As soon as they finished painting and put their materials away, I asked the children to write quickly in their notebooks how they felt as they listened to the wolf record. They showed their pictures later, when they were dry. It was an exciting experience.

13. Field trip to Orcas Island. The reasons for the trip were: (1) to have an environmental encounter with a natural wooded area for an extended time; (2) for a camping experience; (3) for an opportunity to photograph a natural area, and hopefully, some wildlife; (4) for observation of some of the elements of nature the class had been studying; i.e., the structure and uses of trees, bees, flowers, and the beehive, as well as the signs and activities of spring.

The children were asked first why they thought I would take them on such a trip. They thought the reasons were: for fun, to see the sunset, to ride the ferry, and to have a chance to use their senses.

Each child had a notebook to bring along on the trip. It contained a map of the area from our school, at Lyman, to the ferry at Anacortes, and a map of Orcas Island. They were instructed to fill in on the map the things they saw along the way. The notebook also had pages for writing about the interesting things they saw and heard, such as wildlife, etc. There were also pages on which to place the pictures they took on the trip and space to write about each picture.

Two children were assigned to each camera. Each child had ten pictures to take of anything he wished. The two were responsible for the camera they used.

While on the trip, the children collected natural materials from which they planned to make a collage. They collected leaves, grasses, pine cones, branches, etc. Special care was taken not to harm any tree, flower, or plant.

The children are encouraged to bring back interesting things they have noticed in the woods or lake areas. If the object cannot be moved without harm to the tree or plant, we can go to observe it. Later we share what we have seen, and discuss it together. The matter of collecting, of bringing items in for observation, provides us with an excellent opportunity to discuss the right and wrong of this act. What can we collect and why? What is not to be disturbed and why not?

I researched with the children's music teacher to find out what songs the children knew. Two chaperones brought guitars and we planned a group sing around the campfire.

14. Experience notebook. Another activity I have used to make the children more aware of their perceptions and of what is important to them is the experience notebook. Every morning each child tells the one thing that impressed him most since yesterday. They could tell about what they saw, or did, or heard about, etc., that they most liked or disliked. After they related the incident, they wrote it in their experience notebook, or journal, dating the entry. It has been interesting for them to look back over the days to see what they thought about and what occurrences were important enough for them to tell about and write down. It provided an opportunity for them to become more aware of themselves and their thoughts and feelings. Listening to others describe their experiences gives each child an opportunity to observe and study his fellows,

to learn about these people with whom he spends so much time.

15. We need other people. The class was seated in a circle with their teacher one of the group. I displayed to the class for several minutes, in silence, a picture of children who are making something together, and a picture of children fighting. I then asked the question, "Why do we need other people? What for?," spending time in discussion of the topic. At the conclusion of the discussion, I sent the students to their seats. I reminded them of the "funny" poetry we wrote in a unit on creative writing that was rather insulting to other people in a fun way, i.e., "I wish Kevin was a fish!" We discussed getting along with people, and that part of getting along with others is liking them. It's easier to like other people if you think good things about them. "Choose another person right now," I instructed the class, "and think about all the good things about him (or her). As you think of these good things, write them down quickly. When you are finished, we will give these papers to the person we wrote about. Think how easy it will be to get along with a person after we tell him we like him! And he will like us!"

After this activity, some children smiled at each other who hadn't done so all year! Much work in this area would have to be done, however, before this activity produced permanent changes.

16. The things we need. The class was seated in a circle. I displayed for the class to observe a picture of a wooded area, with animals and a family in evidence. I reminded the group that we had already talked about how we need people, "but do we need other things besides people? What things do we need?" I spent a good deal of time in discussion of this topic. It helps to realize how very dependent we are on some things by

imagining life without some of them. In order to do this, I reminded the children that earlier, in Science, we had talked about what would happen if the seeds didn't sprout in the spring. We reviewed that discussion. What did we say? What would happen? At the end of this discussion I asked the children to draw a picture of how they think the world will look in twenty years.

17. Who am I? "Now we will choose the person about whom we wrote good things and will take pictures of him. A picture can help a person to know himself better. It can show him what he is really like." With this introduction I instructed the class to take the following kinds of pictures:

- Take a picture of the person's whole body.
- Take a picture of the side of the person.
- Take a picture of the back of the person.
- Take a picture of the person's face.
- Take a picture of the side of the person's face.
- Have him do the same for you.

Now, take your camera home, and:

- Take a picture of yourself.
- Take a picture of your family.
- Take a picture of your family when they don't know you are doing so.
- Take a picture of your house.
- Take a picture of your bedroom.
- Take a picture of your pet.
- Take a picture of your favorite things.

"Now, make a picture notebook of yourself. Under each picture write

a title or sentence telling about the picture. Include this on a page in your book:"

"The two times I have been happiest are . . .

Two times I have been very sad are . . .

I like to play . . .

I like people who . . .

I wish I could . . .

I don't like to . . ."

I also asked the students to include stories and poems they had written.

#### Television

Channel 9, KCTS-TV in Seattle, presented in 1970-71 the WGBH-TV series "All About Me," a science and health series for use in primary classrooms. Some of the units in this series were constructed around the idea of learning about the world through the use of the senses, and they were an excellent aid in helping toward the goal of self-perception that I wanted my children to achieve. The Teacher's Manual for the series gives suggestions for pre-lesson and post-lesson activities in the class and suggests reading sources to complement each lesson. Although these activities are directed toward the televised lesson itself, many of them are excellent ideas in a broader context for a teacher using a perceptual approach to environmental education. Included here is material from the Teacher's Manual for units on the senses: Lesson 10, "Getting the Message," and Lesson 11, "You and Your Senses." In addition, the children enjoyed learning experiences built around the KPEC-TV "Art Starts" series. One unit from this series I used to encourage the children to really perceive the world around them was that entitled "Tempera Trees," with its suggested pre- and post-lesson activity. That unit is also included.

Lesson 10, "Getting the Message" (15 minutes). Material quoted below from the Teacher's Manual for "All About You."\*

### Objectives

1. To help children understand that they learn about the world through their senses.
2. To review the function of the five senses--seeing, hearing, tasting, touching, smelling--and the important message center, the brain.

### Before the Lesson

Show an object with which the children are familiar, such as an orange. Ask them to describe everything they know about it, such as color, size, shape, appearance, taste, smell, and feel. For each characteristic they name, ask: "How do you know?" Do this enough to start them thinking about how they do know the things they know.

### The Lesson

In this lesson children explore the world of their senses. Through simple audio and visual experiments they come to appreciate the importance of their senses--especially the eyes and ears--in the learning process. In one experiment, the teacher, blindfolded and earmuffed, attempts to identify the object in the mystery box. By feeling, smelling, and tasting she finally discovers that it is an apple.

The analogy of a messenger boy carrying messages is used to explain the pathways of learning within the body. Eyes, ears, nose, mouth, and skin are made to receive messages, and these are routed to the brain along a network of nerves. An animated diagram shows how this works.

The use of the senses in a learning situation is shown by two rats in a maze. The trained rat knows his way to his food dish, based on many prior trials, but his untrained brother must fumble along. Both, however, are using their senses.

The lesson ends with the question: Do your senses sleep when you are asleep?

### Special Vocabulary

Senses

Brain

Nerves

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\*Material from Lessons 10 and 11, Teacher's Manual for "All About You," reproduced here with the permission of National Instructional Television Center, Bloomington, Indiana.

### Activities

1. Show the children a tray with a dozen familiar objects of different shape and color. For example: an orange, a yellow car, blue block, green crayon, red ball, etc. Allow them to study the collection for 20 seconds. Then ask them to describe what they saw, giving the correct color. What sense did they use? What parts of their body did they use? Did their message center store the information correctly?
2. To show the relationship of taste to smell, have the children discover whether they can tell what they are tasting with their eyes closed and their noses pinched. Liquids are better than solids for this experiment as many solids can be identified by feel. Try a small amount of milk, soda pop, water, salted water, tea.
3. Discuss with the class the importance of their senses in relation to personal safety: seeing and hearing traffic signals, seeing and hearing automobiles coming, smelling smoke, testing spoiled food, feeling heat to avoid touching hot objects. Let the children add to the list from their own experiences.
4. Fill a paper bag full of familiar objects--pencil, chalk, etc.--and see whether the children can guess what they are by feeling them.
5. Ask children to identify with their eyes closed, such sounds as: an alarm clock ticking and buzzing, a bell ringing, a bottle half full of water being shaken, and paper being torn or crumpled.
6. Read favorite stories to the class and have them notice how sights, sounds, smell, touch and taste are used to make the story more enjoyable. Some books that are rich with sensory experiences are:

Lois Lenski, I Went for a Walk, Walck.

Zenda Gay, Look, Viking Press.

Margaret Wise Brown, City Noisy Book, Harper.

Paul Showers, The Listening Walk, Crowell.

Ruth Shaw Radlauer, About Four Seasons and Five Senses, Melmont.

Lesson 11, "You and Your Feelings" (15 minutes). Material quoted below from the Teacher's Manual for "All About You."

### Objectives

1. To make children aware that people have feelings. There are times when everyone feels happy, sad, angry, or afraid.
2. To make children understand the importance of considering the feelings of other people.
3. To have them realize that as they grow up their feelings grow up, too.

### Before the Lesson

Have the children draw pictures of things that make them feel happy. Or make cartoon figures for flannel board use named Glad, Sad, and Mad, and ask the children to tell stories explaining why they are glad, sad, or mad.

### The Lesson

Having explored the world of sensory feelings in the last lesson, the teacher turns to look at feelings of a different kind. A bit of dramatic play between the teacher and a character puppet named Mugsy points up the difference between feelings that come through the senses and feelings that come "from inside." The children see, too, how easily someone's feelings can be hurt, as when Mugsy criticizes the teacher's attempt at painting.

How can we tell what other people are feeling? One way is by imagining yourself in someone else's shoes. This the children do as they try to imagine themselves in the different situations presented in word and picture. Another way is by looking at faces. The children learn as they guess at the meaning of the facial expressions in several photographs.

The problem of mixed feelings is sensitively depicted in a sequence of photographs of a little girl's first day at school. The lesson ends with a story the teacher tells about herself which shows how a person's feelings grow up.

### Questions for Discussion

1. Ask the children, What are some of the things that frightened them once, but don't any longer. What is it you want to do when you are afraid? Run away? What helps you to get over being afraid? Encourage them to discuss the things they are afraid of with a grownup who cares about you and wants to help you.
2. Why is it sometimes good to be afraid? Explore with your class the idea that many times it is wise to be afraid. There are sensible fears that help keep one safe, such as fear of crossing a busy street, swimming in water too deep, or touching strange animals.
3. Is being angry or cross all the time a good way to be? Why not?
4. What do we mean by "mixed feelings"? Can you feel two different ways about a thing at the same time? Did you have "mixed feelings" the first day you came to school? How did you feel the first time you stayed away from home all night? The first time you went to a party?
5. Ask the children to give examples of things done and said by persons who don't consider the rights and feelings of others.

Encourage them to suggest a more considerate approach to the situations mentioned.

6. Read and discuss one of the following books which concern children's feelings:

Ann Alexander, Noise in the Night, Rand McNally.

Joan Walsh Anglund, Love is a Special Way of Feeling, Harcourt, Brace & World.

Russell and Lillian Hoban, Some Snow Said Hello, Harper & Row.

Munro Leaf, Manners Can Be Fun, Lippincott.

Lillian Moore, I Feel the Same Way, Atheneum.

#### Lesson 29, "Tempera, Trees," from the KPEC-TV series "Art Starts"\*

##### Aims

1. To stir up interest in painting again.
2. To encourage the children to mix colors.
3. To motivate children to really look at and think about trees, and to use this new awareness as inspiration for a painting.

##### Materials

Paint, tempera, the primary colors and white.

Other colors if you wish.

Brushes, 1/2 and 1-inch bristle

Paper, manila, construction, bogus or wrapping paper of different colors; size, whatever is practical for your painting area.

Water available for washing brushes

Rags

Smocks or aprons

Old newspapers

Use your own favorite method for organizing your children for painting.

##### TV Lesson

There will be demonstrations of mixing brown and green and painting a tree as well as brief review of use and care of materials, and discussion of the color of the background paper and its relation to the colors of the paints. The assignment will be for each child to think of a tree he knows and paint it.\*\* Children's

\*Tempera trees material from the Teacher's Manual, "Art Starts," is reproduced by permission of KPEC-TV, licensed to Clover Park School District No. 400, Lakewood Center, Washington.

\*\*Our class had an environmental encounter with a wooded area to choose a tree to paint.

paintings will be shown. "Hot Springtime" by Schmidt-Rottluff will be shown briefly.

#### After TV

A little discussion before the painting begins will channel the children's thinking to their own experiences with trees. Also, if you have not painted for some time you may need to review any rules and regulations you have regarding use and care of materials.

### ENVIRONMENTAL PERCEPTION

#### Goals:

1. To expand self-awareness.
2. To expand perception of our environment, or surroundings.
3. To perceive and ponder the misuses of environment.

Now that the children have (I hope) a clearer idea of themselves and how they perceive the environment around them, and have become more aware of the beauty therein, they have a good foundation upon which to begin to make comparisons. They can begin to perceive some of the misuses of the environment, and compare areas so misused with the natural beauty they also perceive around them. Sometimes it is hard for a person who lives in a beautiful area to believe it could become polluted. Therefore it is important to become aware of pollution that already exists there, and to examine the ways in which it became polluted. It is important to ask who pollutes an area, and why.

#### Activities

Following is a list of activities in many areas of the curriculum that could be used to help develop and deepen the children's environmental perception, especially of pollution in the environment. My class participated in all of these activities, continuing to use cameras and encounters.

1. Read a Weekly Reader newspaper for children containing an article about oil pollution. Talk about the bad effects this may have. Consider other types of pollution. Find out if anyone knows of a polluted area, and ask, "Why is it polluted?"

2. Have a discussion, with the focus being two photographs--one of natural beauty, and one of a similar area that has become polluted. Lead the discussion to becoming one of values: "Why have they polluted this area? Who polluted it? Could the pollution have been prevented?"

3. Show films and discuss them. The following are a few excellent ones:

"Water Pollution," 15 min., color, Britannica Films.

"Air Pollution," 15 min., color, Britannica Films.

"The Squeeze" (a film on overpopulation), 10 min., B&W, Hank Newenhouse.

"Litterbug," 8 min., color, Walt Disney Productions.

"Tom Lehrer Sings Pollution," 3 min., B&W, U.S. Public Health Service.

4. Investigate the amount of garbage collected from the school lunchroom. "Who collects it? What disposal facilities are used? Are they adequate? Does this method of disposal endanger community health?" Show a photograph of air pollution.

5. Experiments:

a. Have the children collect samples of pond water in half-gallon containers, and ask them, "guess what will happen to the water after three days? How will it smell? Should we taste it?" Examine the water through a microscope, when it is first collected and after three days.

b. Add to fresh tap water: grass, glass, paper, gum, pop,

an apple core, a rusty nail, sour milk, detergent, string, and other things the children may contribute. Leave the container covered for a few days, then uncover and examine the water. Also examine it under a microscope. Ask "How many of you have polluted a river or lake in one of these ways? How would you clean up this water?" (This experiment would be a good one to precede a trip to the city water treatment plant.)

c. Tape sticky paper on four sides of a quart jar. Put the jar outside and then show the accumulated dust after a few days with a magnifying glass.

d. Collect dust in a jar filled with water for 30 days. Then evaporate water and see the collected dust. "In what areas would more dust be collected? Why? What makes dust in the air? Is dust in the air harmful? Why? Who is it harmful to?"

#### 7. Art Projects:

- a. Make a litterbug from trash and scraps.
- b. Make a collage from leaves, bark, and cones from an outdoor area.

8. Display several excellent photographs of nature and pollution in the room. (We used the following photographs taken by Lee Mann: (1) Thimbleberry leaves; (2) Smoke; (3) View from Sauk Mountain; (4) Silver Firs; (5) a snowy creek (untitled); (6) Sauk Mountain.)

Seat the class in a circle with the teacher seated as one of them. Show the class the photographs one at a time. Suggest to them that those are subjects that they also could take pictures of. Ask the children "What do you think of the photographs?" and allow them to express their

feelings about each picture. Ask them, "Why do you think the photographer took this picture?"

The purpose of this exercise is to make the children a little bit more aware, both of the beauty and the ugliness of the environment.

9. Save paper for recycling. Our collected paper was picked up by Environmentally Concerned Students (ECS), a volunteer group of students from Sedro-Woolley High School. (This activity could precede a field trip to a paper reprocessing plant.)

10. Speakers:

a. Ask a photographer to speak to the students about how to use a camera, etc.

b. Ask the school nurse to talk about some of the effects of pollution on people.

11. Field Experiences:

The children in my room participated in several field experiences, some of which they photographed. They made notebooks in which they kept a written and a photographic record of their field experiences, relating what they thought during each experience, and they then compared their conclusions. Some suggested field experiences are:

- a. To a county or other dump where garbage is still burned.
- b. To a land-fill dump.
- c. To a sewage treatment plant.
- d. To a paper reprocessing plant.
- e. To a mountain nature trail in spring, or similar spots of natural beauty. (We went to Baker Lake.)
- f. To a natural wooded area, and to a recently logged-off area.

g. To the freeway.

h. To a car cemetery.

i. To a polluted lake, and then to a non-polluted lake.

(We went to Mud Lake, near Clear Lake, to observe an example of a polluted lake.)

j. To a heavily industrialized area. (We traveled to March's Point at Anacortes.)

k. To any badly littered area.

#### A FEW PROBLEMS ENCOUNTERED

One difficulty I encountered was that the children were unaccustomed to thinking about their perceptions. They were very willing to experience different environments, but they found it difficult to analyze their reactions. They tended to be superficial in their evaluations unless reminded to think about all of their senses.

A minor difficulty was the fact that the children at times could not recognize the pictures they themselves had taken. Even when all the records showed that a particular photograph had to be a particular child's, he sometimes couldn't believe that it would look like it did. We had to spend some time looking through the viewfinder of a camera and thinking about what the finished picture would look like. The children also had a little trouble remembering to hold absolutely still while depressing the shutter button, because they were usually excited. Analyzing the reasons why pictures were blurred or out-of-focus helped this difficulty to some degree.

A difficulty which is still unsolved is evaluation, other than a subjective one, of this project. The results of examining one's perception

are hard to show. We are still trying to solve this problem, in conjunction with the University of Washington Bureau of Testing.

RECOMMENDATIONS TO TEACHERS FOLLOWING UP A SECOND OR THIRD GRADE ENVIRONMENTAL PROGRAM

These students need more opportunities to have environmental encounters. They are only beginning to become aware of themselves and their environment. This work needs to be continued and expanded. In conjunction with self-perception and environmental perception, these children need more emphasis on interpersonal relations, and on getting along with each other. They constantly trespass and trample each other's property and feelings. They have little regard for how another person may feel. Perhaps conferences with them might help--or in some cases, counseling.

The students would benefit if they could continue their studies of pollution in the later grades. As they examine the different kinds of pollution, it would be well if they could be simultaneously involved in a project combating pollution in some way. If they are given an opportunity to help plan this project themselves, it will increase its value to them. The idea of collecting paper to be reprocessed, and thus sparing trees, is such a project.\* This activity would combat a feeling of depression or hopelessness with the condition of the world. A constructive environmental project to become involved with every year would allow the children to become informed, and to become active citizens in the environmental fight. The students would provide a good example for adults to follow in addition to their having done something worthwhile toward solving an environmental problem.

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\*See Sedro-Woolley Project Report #1, "A 'Save Our Trees' Project," by Laurie L. Lundgren.

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27/28

## APPENDIX

Snow Poems

Animal and Other Poems

Encounter with Lyman City Park

SNOW POEMS

Snow

Snow is fun to play in  
I have to make snow men  
It is so fun  
I could play in it all year.

-- Sheila, third year

Snow

The way it is drifted  
The way it sticks  
You could make a snowman  
Out of it.

-- Debbie A., third year

Snow

Snow falls  
I like snow  
Snow is like rain.

-- Alice, third year

Snow

The snow is cold  
When you feel it and  
When you roll it.

It's fluffy too and  
Sometimes it gets in your shoe.

-- Susan I., third year

Snow

At night there is no light  
But usually it rains or snows down  
Below the bright night  
Down where the snow glows.

-- Kevin, third year

## Snowflakes

Snowflakes fall to the ground  
When it is Christmas.  
They are so cute,  
A mouse could beat them.  
I have fun in the snow.

-- Mike S., third year

## ANIMAL AND OTHER POEMS

## Dog

Playful, fights  
He eats, mad  
Is like a Big Monster  
Grunt.

-- Denise, third year

## Dog

Funny, playful,  
Running, playing, sleeping  
Likes snow, fast, lazy  
Sarge.

-- Debbie A., third year

## Dog

Playful  
He is nice to me  
We walk  
Alfie

-- Tony, third year

## Dog

Playful, runs, bites,  
Trips people  
Like a wild lion.  
Rum.

-- Denise, third year

## Dog

Frisky, playful,  
Play in snow  
Like a little deer.  
Bosco.

-- Jeff, second year

Mom's Dog

Steals rugs,  
Barks, eats snow  
He's a nice dog  
Moose.

-- Kevin, third year

Cat

Playful, sweet,  
Runs, plays, eats,  
Like a scared cat.  
Prissy.

-- Sheila, third year

Cat

Lazy, playful,  
Scratching, bites, mad  
Like a lazy panther  
Manx

-- Sheril, second year

Cat

Playful, proud,  
Running, scratching, biting,  
I really love him  
Yankee Doodle

-- Susan I., second year

Cat

Eats, playful,  
Running, mad, climbs,  
Like a miniature tiger  
Tiger

-- Alice, second year

Cat

Eats, sweet,  
Has baby kittens,  
Does not scratch either  
Smoky

-- Pherril, second year

Cow

Long legs, mean,  
Running, Jumping, kicking,  
She makes me happy  
Katey

-- John, second year

Duck

Funny, nice  
Runs, eats slugs,  
Like a swimming duck  
Stuffy

-- John, second year

Rabbit

Nice mother,  
Eats, scratches, plays,  
Looks like a calico cat  
Cottontail

-- John, second year

Rabbit

Playful,  
He likes other rabbits  
Hops with mother rabbit  
He eats, and eats  
Spotty

-- Tony, third year

## Cheetah

He's fast,  
He can jump,  
He has polk-a-dots

-- Mike, third year

## Puppies

We got to have some puppies  
in our room and we got to take  
them outside and take pictures  
of them. They were funny. I let  
Jon hold the puppy and I took  
a picture of it.

-- Jeffy M., second year

## Pigs

There were 13 pigs. One got  
killed and two died. And the mother  
pig bit my toe and I was mad at her.  
The little pigs were playing with a stick  
And one was trying to get out but the  
wall was too big for him. And the mother  
pig was very fat. The mother pig  
had sharp teeth and she made a mark  
on my boat and I was mad at her.

-- Denise N., third year

## Horse

He runs,  
He bucks sometimes,  
Runs, jumps, likes snow  
Butter Ball

-- Denise N., third year

## Horse

Frisky, bites,  
Runs, bucks, jumps,  
Its like a horse  
Cricket

-- Greg, second year

Trees

I saw a tree with blossoms  
 I saw a tree with buds  
 I saw a tree with pink buds  
 It smelled like candy. I heard  
 the branches crash on the trees  
 I saw blossoms falling off  
 the trees.

-- John G., second year

Big Boat

In fall we might take our  
 Big Boat and  
 We are going to take their engine  
 In the water

-- Tony, third year

## ENCOUNTER WITH LYMAN CITY PARK

## Lyman City Park

I saw a log, and a rabbit, and a tree.  
It seemed cold, and it seemed fun to go to the  
park. It felt very cold to me.

-- Tony

## Lyman City Park

I saw two dogs, and a cat. Some tall,  
tall, tall, trees. I heard two dogs  
barking, and a logging truck. I felt cold.  
I could smell vines. I felt the breeze. It  
was pretty.

## Lyman City Park

I saw a tree on the ground. I heard a dog  
barking. It was cold. I smelled Fir trees.

## Lyman City Park

I saw dogs, and a rabbit, and trees. I  
hear birds, and a dog barking. I felt cold.

## Lyman City Park

What did I see? I saw a squirrel. What did I  
hear? I heard a woodpecker. What did I feel? I  
felt cold. What did I smell? I smelled pine trees.

-- Jon, third year

## Lyman City Park

I saw a fountain and a lavatory, and cows  
and a barn, and some leaves and houses, and the  
cemetery and a car. A great big stump and some  
corn stalks, and a picnic-table. I hear a dog  
barking and a logging truck. I smelt the grass  
and the leaves, I felt my dress, coat, and my  
hair. It seemed nice and big.

-- Anita P., second year

## Lyman City Park

I saw some trees and houses. I heard a dog bark. I felt the wind blowing on my face. I smelled some ever green trees. It seemed like a forest very much. I saw a water fountain, with water coming out of it. I liked it very much.

-- Rose H., third year

## Lyman City Park

I saw some trees and a rabbit. A dog and a man, and some branches. I heard a dog barking. When we stepped on the leaves, they made a sound. When we stepped on the branches they made a sound too.

-- Greg, second year

## Lyman City Park

I saw a tree, and a rabbit, and a grave. I saw ten birds. I heard a truck and birds, and kids. It feels cold. It smelled like a forest. It seemed quiet, and birds were singing.

-- Denise, third year

## Lyman City Park

It seemed to me that it was pretty. It seemed to me that it smelled. I saw a dog and I saw some pine cones. Some trees, and a car, and some cows. I saw the grave yard. I saw a picnic-table and houses.

-- Darryll, third year

## Lyman City Park

I heard a dog. I felt leaves on my face. I smelled pitch from a tree. It seemed nice to me.

-- Mickey

## Lyman City Park

I saw some dogs, they barked at us. They did not bother us. I hear the wind up in the trees. I felt the wind going by me. I smelled the nice leaves on the ground. I like it, it was nice of Mrs. Abrahamson to let us go there. I liked the walk. I liked the sounds of the leaves, when we stepped on them. It was fun.

-- John, second year

## Lyman City Park

I saw 2 big logs in the park. I saw some pine cones on the ground at the park. I heard a blue bird and a Robin. It seemed like I was in Seattle. I smelt pitch on the trees.

-- Kevin S.